

IN THE CLAIMS

Please amend the claims as follows:

1. (Currently Amended) An apparatus, including:

a multi-bit encoder coupled to a multi-tone generator to provide a multi-tone communications signal having a substantially simultaneous multi-tone signaling bandwidth of greater than about 20 percent of an associated carrier frequency,

wherein the multi-tone generator is to generate a plurality of tones responsive to data from the multi-bit encoder, and the plurality of tones includes a number of tones greater than a number of possible states of the data.

2. (Original) The apparatus of claim 1, wherein the multi-bit encoder is to receive a first bit stream and to provide a second bit stream having data presented as one or more groups of substantially simultaneous bits.

3. (Original) The apparatus of claim 2, wherein the multi-bit encoder includes a shift register.

4. (Original) The apparatus of claim 1, wherein the multi-tone generator includes:
a master oscillator and at least one slave oscillator.

5. – 6. (Canceled)

7. (Currently Amended) An apparatus, including:

a plurality of phasor detectors to determine a presence of a plurality of tones included in a multi-tone communications signal by comparing a combined amount of two measured orthogonal signal components to a threshold value; and

a distribution module to couple to a omnidirectional antenna and to provide the multi-tone communications signal to the plurality of phasor detectors.

8. (Original) The apparatus of claim 7, wherein at least one of the phasor detectors includes a quadrature detector.

9. (Original) The apparatus of claim 7, wherein the two measured orthogonal signal components include a sine component and a cosine component.

10. (Original) The apparatus of claim 7, further including:
an amplifier having an averaging automatic gain control to receive the multi-tone communications signal from a distribution module and to apply a substantially equal gain to the plurality of tones.

11. (Currently Amended) A system, including:
a multi-bit encoder coupled to a multi-tone generator to provide a first multi-tone communications signal having a substantially simultaneous multi-tone signaling bandwidth of greater than about 20 percent of an associated carrier frequency;
a plurality of phasor detectors to determine a presence of a plurality of tones included in a second multi-tone communications signal by comparing a combined amount of two measured orthogonal signal components to a threshold value; [[and]]
an omnidirectional antenna to transmit the first multi-tone communications signal and to receive the second multi-tone communications signal; and
a distribution module to couple to the omnidirectional antenna and to provide the second multi-tone communications signal to the plurality of phasor detectors.

12. (Canceled)

13. (Original) The system of claim 11, further including:

a determination module to receive multiple indications of the presence of the plurality of tones from the plurality of phasor detectors and to determine a received data output corresponding to the multiple indications.

14. (Currently Amended) The system of claim 11, wherein the plurality of tones includes a number of tones at least two times greater than a number of possible states of [[the]] data in the second multi-tone communication signal.

15. (Currently Amended) A method, including:
translating a first bit stream into a multi-tone communications signal having a substantially simultaneous multi-tone signaling bandwidth of greater than about 20 percent of an associated carrier frequency;
translating the first bit stream into a second bit stream having data presented as one or more groups of substantially simultaneous bits; and
translating the second bit stream into the multi-tone communications signal comprising a number of substantially simultaneous tones not greater than a maximum number of the substantially simultaneous bits.

16. - .17 (Canceled)

18. (Currently Amended) The method of claim [[16]]15, further including:
shifting the first bit stream to provide the second bit stream.

19. (Currently Amended) A method, including:
receiving a multi-tone communications signal at a plurality of phasor detectors to determine a presence of a number of substantially simultaneous tones included in a multi-tone communications signal;
amplifying the multi-tone communications signal using an approximately equal gain prior to the comparing;

comparing a combined amount of two measured orthogonal signal components in at least one of the number of substantially simultaneous tones to a threshold value;
receiving multiple indications of the presence of the plurality of tones from a plurality of phasor detectors; and
determining a received data output corresponding to the multiple indications.

20. – 21. (Canceled)

22. (Currently Amended) An article comprising a machine-accessible medium having associated information, wherein the information, when accessed, results in a machine performing:
receiving a multi-tone communications signal at a plurality of phasor detectors;
determining a presence of a plurality of tones included in [[a]] the multi-tone communications signal by comparing a combined amount of two measured orthogonal signal components to a threshold value;
amplifying the multi-tone communications signal using an approximately equal gain prior to the comparing;
receiving multiple indications of the presence of the plurality of tones from a plurality of phasor detectors; and
determining a received data output corresponding to the multiple indications.

23. – 26. (Canceled)

27. (Currently Amended) An article comprising a machine-accessible medium having associated information, wherein the information, when accessed, results in a machine performing:
translating a first bit stream into a multi-tone communications signal having a substantially simultaneous multi-tone signaling bandwidth of greater than about 20 percent of an associated carrier frequency;
translating the first bit stream into a second bit stream having data presented as at least

two groups of substantially simultaneous bits; and

translating the first bit stream into a second bit stream having data presented as at least
two groups of substantially simultaneous bits.

28. – 29. (Canceled)